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Jian Fan

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INTELLECTUAL PROPERTY ADMINISTRATION
FORT COLLINS, CO 80527-2400

EXAMINER

WORKU, NEGUSSIE

ART UNIT

PAPER NUMBER

2625

NOTIFICATION DATE

DELIVERY MODE

08/12/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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| | | | |
|------------------------------|--------------------------------------|----------------------------------|--|
| Office Action Summary | Application No. 09/709,685 | Applicant(s) FAN, JIAN | |
| | Examiner NEGUSSIE WORKU | Art Unit 2625 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 March 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6,8-21 and 23-57 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-6,8-12,14-16 and 23 is/are rejected.
- 7) ☒ Claim(s) 2,13,17-21 and 24-57 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Supplemental

Response to Arguments

1. Applicant's arguments filed 03/08/2008 have been fully considered but they are not persuasive.

Regarding claim 1, Applicant alleged that the combination of the cited prior arts AlHussein (USP 5,818,978) in view of Mahoney (USP 6,009,196), fails to show or suggest, "assigning each of multiple ones of the elements a respective element label selected from a set of at least three element labels that includes at least one edge element label; grouping spatially connected ones of the elements into respective blobs based on the element labels assigned to the elements, wherein each of the blobs is assigned a respective one of at least two blob labels; and processing ones of the elements based at least in part on the blob labels assigned to the blobs the-and the element labels assigned to the elements". In response, the Examiner respectfully disagrees because the test for obviousness is not whether the features of a secondary

reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). In this case, the Examiner asserts that the combination of

AlHussein '978' when considered as a whole clearly teaches that" a method of processing an image of an element, (image scanned by scanner section 22 of fig 5, received by computer 20 of fig 5, for further processing, see col.8, lines 63-68), comprising: assigning each of multiple ones of the elements (pixels of image) a respective element label selected from a set of at least three element labels that includes at least one edge element label (computer receive scanned image from a scanner, assign image pixel for further processing, according to pixel selected, see col.3, lines 54-56 and col.2, lines 25-32). "as currently amended in claims 1, are well-known in the art at the time of the invention was made. In particular, Mahoney (196), clearly suggested the advantage of combining of a document image capture method and an image processing as shown in fig 1, grouping spatially connected ones of the elements into respective blobs based on the element labels assigned to the elements, i.e., pixels are classifying operation 66 of fig 2, wherein each of the blobs is assigned a respective one of at least two blob labels i.e., the out put from process 32 of fig 2 is set of connected components or "blob", see col.8, lines 62-6; and processing ones of the elements based at least in part on the blob labels assigned to the blobs the and the element labels assigned to the elements as discussed col.7, lines 6-15.

In view of the above, having the system of AlHussein '978' and then given the well- established teaching of Mahoney '196', the Examiner asserts that it would have been obvious to one having ordinary skill in the art at the time of the invention was made to combine the teachings of the references cited because, it would have allowed a user ensure that acquired image data will be of quality and a resolution suitable for the content of the image, even if the image contains text together with gray scale or color image or both. Examiner respectfully submits that the prior arts used, alone or in combination, to teach, suggest or make obvious at least the Applicant's claim 1, and as such the Office action Fully satisfies the requirements of 35 U.S.C. § 103 and is unpatentable. Finally, for the above reasons, the Examiner asserts that the combination of AlHussein '978' and Mahoney '196' does in fact the present claimed invention is known to ordinary skilled in the art at the time of the invention was made, thus, the rejections are maintained as fallows:

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 3-6, 8-12 and 14-16 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Al-Hussein (USP 5,818,978) in view of Mahoney (USP 6,009,196).

With respect to claim 1, Al-Hussein discloses a method of processing an image of an element, (image scanned by scanner section 22 of fig 5, received by computer 20 of fig 5, for further processing, see col.8, lines 63-68), comprising: assigning each of multiple ones of the elements (pixels of image) a respective element label selected from a set of at least three element labels that includes at least one edge element label (computer receive scanned image from a scanner, assign image pixel for further processing, according to pixel selected, see col.3, lines 54-56 and col.2, lines 25-32).

Al-Hussein dose not disclose grouping spatially connected ones of the elements into respective blobs based on the element labels assigned to the elements, wherein each of the blobs is assigned a respective one of at least two blob labels; and processing ones of the elements based at least in part on the blob labels assigned to the blobs the and the element labels assigned to the elements.

Mahoney (196)., in the same area of a document image capture method and an image processing (as shown in fig 1), teaches grouping spatially connected ones of the elements into respective blobs based on the element labels assigned to the elements, (pixels are classifying operation 66 of fig 2) wherein each of the blobs is assigned a respective one of at least two blob labels (the out put from process 32 of fig 2 is set of connected components or "blob", see col.8, lines 62-68); and processing ones of the

elements based at least in part on the blob labels assigned to the blobs the and the element labels assigned to the elements (see col.7, lines 6-15).

Therefore, it would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified the imaging apparatus of Al-Hussein to include: grouping spatially connected ones of the elements into respective blobs based on the element labels assigned to the elements, wherein each of the blobs is assigned a respective one of at least two blob labels; and processing ones of the elements based at least in part on the blob labels assigned to the blobs the and the element labels assigned to the elements.

It would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified imaging device of Al-14ussein by the teaching Mahoney (196) because of the following reasons: It would have allowed to a user ensure that acquired image data will be of quality and a resolution suitable for the content of the image, even if the image contains text together with gray scale or color image or both.

With respect to claim 3, Al-Hussein discloses the method (fig 1-5), the method wherein the elements correspond to pixels-of the image, see (co1.10, lines 5-15).

With respect to claim 4, Al-Hussein discloses the method (fig 1-5); wherein the background assigning comprises determining a white threshold value from luminance values associated with ones of the elements, see (co1.18, lines 10-12).

With respect to claim 5, Al-Hussein discloses the method (fig 1-5), wherein the formation assigning comprises determining a black threshold value from the determined white threshold value, see (co1.18, lines 10-12).

With respect to claim 6, Al-Hussein discloses the method (fig 1-5), wherein the assigning comprises determining a color threshold based at least in part on color values respectively associated with ones of the elements step, see (col.2, lines 45-48).

With respect to claim 8, Al-Hussein discloses the method (as shown in fig 5), wherein the assigning comprises labeling ones of the elements with respective ones of the element labels based at least in part on luminance values respectively associated with the elements, (step 1207 of fig 12, see co1.18, and see also lines 5-10, co1.18, line 5-15).

With respect to claim 9, Al-Hussein discloses the method (as shown in fig 5), wherein the label comprises comparing the luminance values to step a white threshold value, see co1.12, lines 50-55).

With respect to claim 10, Al-Hussein et al. discloses the method (as shown in fig 5), wherein the labeling comprises step of assigning to each of multiple ones of the pixel elements of a respective one of a black element label, a white element label, and a gray element label based on comparisons of the luminance values to a white threshold and a black threshold, (step 1207 of fig 12, a given value for a black pixel 1", for white 0" value is given and are adjacent (white pixel), see co1.12, lines 50-55).

With respect to claim 11, Al-Hussein et al. discloses the method (as shown in fig 1), wherein the labeling comprises step of assigning to-each of multiple ones of the pixel elements of a respective one of a black element label, a white element label, and a gray element label based on comparisons of the luminance values to a white threshold and a black threshold, (pixel set to binary 1", if pixel is black) pixel is white, see (co1.12, lines 51-54).

With respect to claim 12, Al-Hussein et al. discloses the method (as shown in fig 5), wherein the labeling comprises assigning to-each of multiple ones of the elements a respective one of a black element labels, a white element label, and a color element label, see (co1.17, lines 33-38), see also col.3, lines 45-48).

With respect to claim 14, Al-Hussein et al. discloses wherein the using grouping is based on a respective-an eight neighbor's system connectivity analysis performed for each of the elements, see (co1.17, lines 33-35, co1.13, lines 35-40).

With respect to claim 15, Al-Hussein et al. discloses the method (as shown in fig 5), the method of claim 1 wherein the step of identifying each element that is adjacent includes the step of identifying adjacent pixels that are background pixels, (co1.13, lines 35-40).

With respect to claim 16, Al-Hussein et al. discloses the method (as shown in fig 5), wherein the grouping comprises step-of labeling adjacent ones of the elements that is outside the background blob label a non-background blob label pixel, (col.2, lines 5-9).

With respect to claim 23, Al-Hussein et al. discloses the method (as shown in fig 5), wherein the assigning comprises applying a gradient operator to ones of the elements to produce gradient data and labeling ones of the elements with the edge element label based on the gradient data, see (col.1, lines 33-38), see also col.3, lines 45-48).

Claims objected to having Allowable Subject Matter

4. 2, 13, 17-21 and 24-57 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Therefore, the prior art searched or cited do not teach or disclose the method, wherein segmenting spatially connected ones of the elements in each of the blobs into respective sub-blobs based on the labels assigned to the elements, wherein each of the sub-blobs is assigned to a respective one of at least two sub-blob labels, wherein the processing is based at least in part on the sub-blob labels assigned to the sub-blobs.

As to claim 13, also the prior art does not teach or disclose the method wherein the grouping comprises grouping spatially connected ones of the elements that are assigned element labels within a first subset of the element labels into a respective one of the blobs assigned a first blob label, and grouping spatially connected ones of the elements that are assigned element labels within a second subset of the element labels into a respective one of the blobs assigned a second blob label.

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to NEGUSSIE WORKU whose telephone number is (571)272-7472. The examiner can normally be reached on 9A-6PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Coles can be reached on 571-272-7402. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2625

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Negussie Worku/

Examiner, Art Unit 2625